Module code: M303 **Further pure mathematics**

Errata

Contents

1. Errata

SUP101916

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Administration

Errata

Find below a list of all the errors (and their corrections) found in the module so far.

We will also post a list in each book forum and we will update the forum posts should any more be found --- please post a query in the relevant forum if you think you have found one.

Book A Errata

Chapter 1	
Page 7, line -2	Delete the sentence beginning `For example'.
Chapter 3	
Page 139, straight after Exercise 1.7	The reference should be to Exercise 1.7 (not 1.3).

Book B Errata

Chapter 6	
Page 92, line 2	The function ϕ has codomain V, so the description should start $\phi\colon H_1 \times H_2 \to V$.
Page 105, Proof of Corollary 2.4, last line	This should say $n \geq 0$.

Page 108, line 15	Part (c) of Proposition 2.6 should say $am + bn = \mathrm{hcf}(m, n)$ and not $am + bn = \mathrm{hcf}(a, b)$.
Chapter 7	
Exercise 1.5, page 157, line -2	Replace `not equal to $K$' by `not equal to $\overline{K}$'.
Lemma 3.3, page 176, line -2	Replace `Proposition 4.5' by `Exercise 4.7'.
Solution to Exercise 2.7, page 200	The displayed expression should end $\frac{8}{2} = 4$.
Chapter 8	
Solution to Exercise 1.9(a), page 243	Replace `Lagrange's theorem' with `Methods similar to those used in the proof of Lagrange's theorem'

Book C Errata

Chapter 12	
Page 201, last two lines of proof of Lemma 3.10	the definitions of s and t are the wrong way round. It should read $s = b^{-1}t'$ and $t = b^{-1}s'$ (which is slightly unfortunate!).
Page 216, lines -14 and -15	The $d = -1$ should be $d = +1$ and the $d = 1$ should be $d = -1$.

Book D Errata

Chapter 13	

Page 27, margin note	$a + \frac{1}{n} = \frac{p}{q}$ should be $a + \frac{1}{n}\sqrt{2} = \frac{p}{q}$
Page 41, first line of solution to Worked Exercise 3.6	Replace (ℓ_n) in first line by $(\mathbf{b}_n)$.
Chapter 15	
Theorem 3.11, page 139, line 2	The end of the first sentence should read: for $X = X_1 \times X_2$.
Solution to Exercise 2.3, page 170, line 7	There are some missing parentheses. This line should read: $d(\mathbf{a}, \mathbf{b}) \geq 2^{-i} \geq 2^{-(n-1)} > 2^{-n}$
Chapter 16	
Page 192, Remark 2 after Definition 1.16	The first sentence should be: For each $j \in I$, $\bigcap_{i \in I} A_i \subseteq A_j$.
Page 226, line 1 of Theorem 6.3	`Let $(X, d)$ be a metric and ...' should be `Let (X, d) be a metric space and ...'
Page 226, line -2 in proof of Theorem 6.3	$A \subseteq \mathbb{C}_{(X,d)}(B)$ should be $A \subseteq \mathrm{Cl}_{(X,d)}(B)$

Book E Errata

Chapter 17	
Page 15, Definition 1.9(b)	Delete the `in' between `unit' and `$u \in R$'.
Page 39, second line of proof of Proposition 3.8	The end of the line should read: $a_1R + a_2R + \cdots + a_nR \subseteq A,$

Page 48, last line of proof of Proposition 4.14(b)	The end of the line should read: so $ra \in \mathbf{Ker}(f)$
Page 63, Solution to Exercise 2.13, part (a)	The reference to 'Theorem 2.11' should be to 'Corollary 2.11'.
Chapter 19	
Page 142, line 3 of proof of Theorem 1.2	The letter K should be $F(\alpha)$.
Page 145, first paragraph following proof of Theorem 1.5	The reference to 'Example 1.4' should be to 'Worked Exercise 1.4'.

Page 173 -- 174, solution to Exercise 1.4	The two occurrences of $\sqrt{6}-1$ in the last line of the solution of part (a) on page 173 have to be replaced by $\sqrt{3}-\sqrt{2}$. The other two roots are $\pm(\sqrt{3}-\sqrt{2})$. The same replacement applies to line 2 on page 174. There is also an error in line 1 of page 174: It should read $(\sqrt{2}+\sqrt{3})^2 = 5+2\sqrt{6}$, the factor of 2 is missing in the text. Due to the first error, the argument in the first two lines on page 174 should be re-stated as follows: Now, $(\sqrt{2}+\sqrt{3})^2 = 5+2\sqrt{6}$ and so $\sqrt{6} \in \mathbb{Q}(\sqrt{2}+\sqrt{3})$. This implies that $\mathbb{Q}(\sqrt{2}+\sqrt{3})$ also contains $\sqrt{6}(\sqrt{2}+\sqrt{3}) = 3\sqrt{2}+2\sqrt{3}$, and it follows that both $\sqrt{2}, \sqrt{3} \in \mathbb{Q}(\sqrt{2}+\sqrt{3})$, so that this field also contains the elements $\pm(\sqrt{3}-\sqrt{2})$. The last sentence of the solution of (c) is then OK.
Page 182, Solution to Exercise 2.11(a)	At the end of step 7 of the construction the formula should read: $OE = \cos\left(\frac{2\pi}{5}\right)$.
Page 183, Solution to Exercise 2.11(b) (ii)	The cosine formula is incorrectly stated: it should read $c^2 = a^2 + b^2 - 2ab\cos C$.

Chapter 20	
Page 245, Solution to Exercise 1.7	The beginning of line -3 should start 2^{-2} rather than 2^{-1}.
Page 247, Solution to Exercise 2.3, final line	Should have $(x^3, \pm\sqrt{x^3+2})$ rather than $(x^3+2, \pm\sqrt{x^3+2})$.

Book F Errata

Page 24, Example 3.17	The metric should be $d^{(1)}_{(0,1)\cup(2,3)}$ not $d^{(1)}_{(0,1)}$
Chapter 22	
Page 90, Exercise 3.5	The last sentence should say: 'Show that A_g is pointwise bounded.'
Page 97, Proof of 3.12. line 12	Should have ...for each $i \in \mathbb{N}$ at the end, not $i \in A$.
Page 128, Solution to Exercise 3.2, line 10	Should have $f(x_{n_i}) \overset{e}{\to} f(x)$ as $n \to \infty$.
Page 134, Solution to Exercise 5.5, line 2	Should have ...If $0 < \varepsilon \leq (b-a)$ not $0 < \varepsilon \leq (a-b)$.
Chapter 23	
Page 154, Figure 2.2	The values on the x-axis need to be swapped: so $\frac{1}{2}\left(1-\frac{1}{n}\right)$ first and $\frac{1}{2}\left(1-\frac{1}{m}\right)$ second.

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